REMARKS

Claims 1-5, 7, 8, 10, 12, 13, and 24 are currently pending in the subject application, and are presently under consideration. Claims 1-5, 7, 8, 10, 12, 13, and 24 are rejected. Claims 1, 5, 10, 12, and 24 have been amended. New claims 25-33 have been added. Favorable reconsideration of the application is requested in view of the amendments and comments herein.

I. Rejection of Claims 1-5, 7, 8, 10, 12, 13, and 24 Under 35 U.S.C. §102(e)

Claims 1-5, 7, 8, 10, 12, 13, and 24 stand rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Publication No. 2004/0253801 to Lin ("Lin"). Claims 1, 5, 10, 12, and 24 have been amended. Withdrawal of this rejection is respectfully requested for at least the following reasons.

Claim 1 has been amended to recite that the plurality of inter-level dielectric (ILD) layers are each formed of a dielectric material having a low dielectric constant (k). Lin discloses that, during fabrication of a semiconductor device, layers of a low-k dielectric material are provided as support layers between metal layers (Lin, Paragraph 62). The support layers are then subsequently etched and removed from the semiconductor device under fabrication, such that the support layers are replaced by air or vacuum layers (Lin, FIG. 6; Paragraphs 68 and 69). Representative for Applicant respectfully submits that air or vacuum is not a material, and thus cannot be considered a dielectric material. Therefore, Lin does not teach a semiconductor device that includes a plurality of ILD layers that are formed of a low-k dielectric material, as recited in claim 1. Accordingly, Lin does not anticipate claim 1. Withdrawal of the rejection of claim 1, as well as claims 2-5, 7, 8, and 10 which depend therefrom, is respectfully requested.

Claim 12 recites a plurality of support structures that are disposed in at least one of the plurality of dielectric layers in an n x m matrix configuration, where n and m are integers greater than one, and that the plurality of support structures are disposed at a location below a bond pad disposed on the semiconductor device. The Office Action dated October 12, 2007 (hereinafter "Office Action"), asserts that Lin discloses these elements of claim 12 (Office Action, page 8). Representative for Applicant respectfully disagrees. Lin discloses two vias extending through

low-k dielectric layers during fabrication of a semiconductor device (Lin, FIG. 7; Paragraph 69). Representative for Applicant respectfully submits that, assuming *arguendo* that the vias can be considered equivalent to the claimed support structures, Lin discloses a 1x2 matrix. Therefore, Lin fails to teach that n and m are integers greater than one, as recited in claim 12. Furthermore, Lin fails to disclose a location of the respective two vias with respect to a bond pad on the semiconductor device, such that Lin fails to teach that the plurality of support structures are disposed at a location below a bond pad disposed on the semiconductor device, as recited in claim 12. Accordingly, Lin does not anticipate claim 12. Withdrawal of the rejection of claim 12, as well as claim 13 which depends therefrom, is respectfully requested.

Claim 24 has been amended to recite that the plurality of inter-level dielectric (ILD) layers are each formed of a dielectric material having a low dielectric constant (k). For substantially the same reasons described above regarding claim 1, Lin fails to anticipate claim 24. Withdrawal of the rejection of claim 24 is respectfully requested.

For at least the reasons described above, Lin fails to teach, and thus anticipate, claims 1-5, 7, 8, 10, 12, 13, and 24. Withdrawal of this rejection is therefore respectfully requested.

II. Rejection of Claims 1-5, 7, 8, 10, 12, 13, and 24 Under 35 U.S.C. §102(e)

Claims 1-5, 7, 8, 10, 12, 13, and 24 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,204,165 to Ghoshal ("Ghoshal"). Claims 1, 5, 10, 12, and 24 have been amended. Withdrawal of this rejection is respectfully requested for at least the following reasons.

Claim 1 has been amended to recite that the plurality of inter-level dielectric (ILD) layers are each formed of a dielectric material having a low dielectric constant (k). Similar to Lin, as described above, Ghoshal describes that layers of a dielectric material are etched and removed from a semiconductor device during fabrication (Ghoshal, col. 4, ll. 15-28). In addition, Ghoshal describes that the dielectric material that is implemented in the semiconductor device during fabrication is silicon oxide, which is not a material having a low dielectric constant (k), as described and defined in the Present Application (see, *e.g.*, Present Application, page 1, ll. 20-22;

page 4, ll. 28-30). Therefore, Ghoshal does not teach that the plurality of inter-level dielectric (ILD) layers are each formed of a dielectric material having a low dielectric constant (k), as recited in claim 1. Accordingly, Ghoshal does not anticipate claim 1. Withdrawal of the rejection of claim 1, as well as claims 2-5, 7, 8, and 10 which depend therefrom, is respectfully requested.

Claims 12 and 24 should be patentable in view of Ghoshal for substantially the reasons described above regarding claim 1. Accordingly, Ghoshal does not anticipate claims 12 and 24. Withdrawal of the rejection of claim 12, as well as claim 13 which depends therefrom, and claim 24 is respectfully requested.

For at least the reasons described above, Ghoshal fails to teach, and thus anticipate, claims 1-5, 7, 8, 10, 12, 13, and 24. Withdrawal of this rejection is therefore respectfully requested.

III. New claims 25-33

New claims 25, 29, and 31 depend from claims 1, 12, and 24, respectively, and recite that the low dielectric constant (k) of the dielectric material of the plurality of ILD layers has a value between about 1.0 and about 3.8. As described above, neither Ghoshal nor Lin anticipate claims 1, 12, and 24. Accordingly, new claims 25, 29, and 31 should likewise be allowed over the cited art. Consideration and allowance of new claims 25, 29, and 31 is respectfully requested.

New claim 26 depends from claim 1 and recites that the ultra low dielectric constant (k) of the dielectric material of the plurality of ILD layers has a value between about 1.0 and about 2.7. As described above, neither Ghoshal nor Lin anticipate claim 1. Accordingly, new claim 26 should likewise be allowed over the cited art. Consideration and allowance of new claim 26 is respectfully requested.

New claim 27 depends from claim 1 and recites that the at least one support structure is a plurality of support structures, the semiconductor device further comprising a solder bump overlying the contact surface, the plurality of support structures being located directly

underneath the solder bump. None of the cited art teaches or suggests new claim 27. Consideration and allowance of new claim 27 is respectfully requested.

New claim 28 depends from claim 1 and recites that the at least one support structure comprises a first plurality of support structures extending along a length of the semiconductor device and a second plurality of support structures extending along a width of the semiconductor device, the first and second plurality of support structures intersecting perpendicularly with respect to each other. None of the cited art teaches or suggests new claim 28. Consideration and allowance of new claim 28 is respectfully requested.

New claim 30 depends from claim 12 and recites that the n x m plurality of support structures are configured such that the n support structures extend along a length of the semiconductor device and the m support structures extend along a width of the semiconductor device, the plurality n support structures and the plurality m support structures intersecting perpendicularly with respect to each other. None of the cited art teaches or suggests new claim 30. Consideration and allowance of new claim 30 is respectfully requested.

New claim 32 depends from claim 24 and recites that the at least one support structure is a plurality of support structures, the plurality of support structures being located directly underneath the bond pad. None of the cited art teaches or suggests new claim 32. Consideration and allowance of new claim 32 is respectfully requested.

New claim 33 depends from claim 24 and recites that the at least one support structure comprises a first plurality of support structures extending along a length of the semiconductor device and a second plurality of support structures extending along a width of the semiconductor device, the first and second plurality of support structures intersecting perpendicularly with respect to each other. None of the cited art teaches or suggests new claim 33. Consideration and allowance of new claim 33 is respectfully requested.

CONCLUSION

In view of the foregoing remarks, Applicant respectfully submits that the present application is in condition for allowance. Applicant respectfully requests reconsideration of this application and that the application be passed to issue.

Please charge any deficiency or credit any overpayment in the fees for this amendment to our Deposit Account No. 20-0090.

Respectfully submitted,

Date 12 February 2008

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